

WHAT IS CLAIMED IS:

1. A multi-service network system which forms a wide area network connecting a plurality of metropolitan areas, comprising:

a primary network ring including at least one primary node and at least one secondary node; and

a secondary network ring connecting the at least one secondary node to business premises equipment, wherein the business premises equipment are associated with respective customer premises equipment.

2. The multi-service network system according to claim 1, wherein the primary network ring includes at least two primary nodes and the secondary nodes are located between the primary nodes on the primary network ring.

3. The multi-service network system according to claim 2, wherein the customer premises equipment are located between the secondary nodes on the secondary network ring.

4. The multi-service network system according to claim 4, wherein the business premises equipment are connected to the customer premises equipment through a tertiary network ring.

5. The multi-service network system according to claim 5, wherein the links which connect the at least one primary node, the at least one secondary node, the business premises equipment and the customer premises equipment are optical links.
6. The multi-service network system according to claim 6, wherein the links include at least one from the group containing E1, E3, STM-1, STM-4, STM-15 and STM-64 links.
7. The multi-service network system according to claim 1, wherein the business premises equipment have one of bi-directional line switched ring and uni-directional path switched ring functionality.
8. The multi-service network system according to claim 1, wherein the business premises equipment and the customer premises equipment use asynchronous transfer mode protocol to share the available spectrum.
9. The multi-service network system according to claim 1, wherein a management system monitors the functioning of the customer premises equipment.
10. The multi-service network system according to claim 1, wherein the primary network ring is formed in the vicinity of a metropolitan area.
11. A multi-service network system which provides voice, data and video network services to a customer, comprising:

a primary network ring including at least one primary node and at least one secondary node; and

a secondary network ring connecting the at least one secondary node to business premises equipment, wherein the business premises equipment are associated with respective customer premises equipment which aggregate customer traffic and provide the network services to a customer.

12. The multi-service network system according to claim 11, wherein the network system forms a wide area network connecting major metropolitan areas.

13. The multi-service network system according to claim 12, wherein the primary network ring includes at least two primary nodes and the secondary nodes are located between the primary nodes on the primary network ring.

14. The multi-service network system according to claim 12, wherein the customer premises equipment are located between the secondary nodes on the secondary network ring.

15. The multi-service network system according to claim 14, wherein the business premises equipment are connected to the customer premises equipment through a tertiary network ring.

16. The multi-service network system according to claim 15, wherein the links which connect the at least one primary node, the at least one secondary node, the business premises equipment and the customer premises equipment are optical links.

17. The multi-service network system according to claim 16, wherein the links include at least one from the group containing E1, E3, STM-1, STM-4, STM-15 and STM-64 links.

18. The multi-service network system according to claim 1, wherein the business premises equipment have one of bi-directional line switched ring and uni-directional path switched ring functionality.

19. The multi-service network system according to claim 11, wherein the business premises equipment and the customer premises equipment use asynchronous transfer mode protocol to share the available spectrum.

20. The multi-service network system according to claim 11, wherein a management system monitors the functioning of the customer premises equipment.